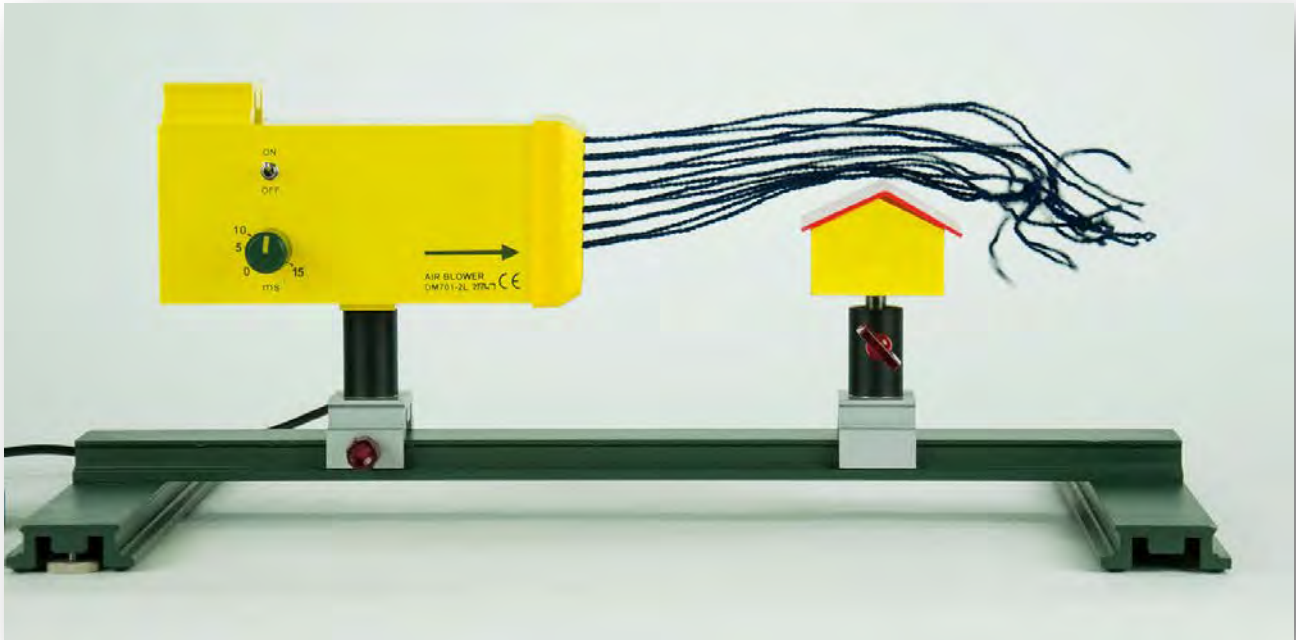


FLOW PATTERNS OVER A HOUSE ROOF

MED 19.24



Material:

Item Code	Qty	Description
DS101-1G	1	Support base, large, L=500 mm
DS093-04	2	Sliding saddle "Sepp", H=40 mm
DM701-2L	1	Blower 12 V
P3130-2Q	1	Fixed voltage transformer 12V DC/10 A
DM702-2L	1	Streamline adapter
DM714-1D	1	House, model
DM714-2D	1	Roof accessory for model house

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Purpose

If the air stream is constricted by an obstacle, for example a house roof, the streamlines get compacted and result in an increased of the flow speed. This can result in the roof of the house getting blown off.

Preparation

- the two sliding saddles is fixed on the support base
- the streamline adapter is put onto the blower
- the blower is inserted into the left sliding saddle
- the house is inserted into the right sliding saddle;
the roof is placed on top of it with a low amount of inclination
- the house should be positioned approx. 12 cm away from the front of the blower
- the rotary knob for the flow speed of the blower is turned to the very left
- the blower is powered by a fixed voltage transformer (12 V DC, min. 6 A).

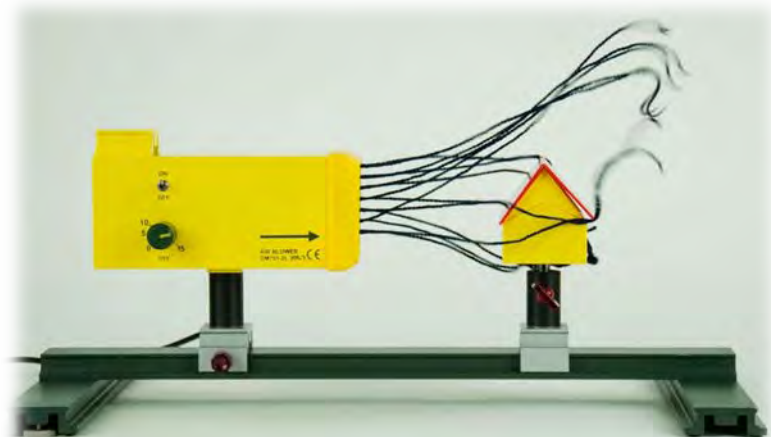
Experiment 1

We turn on the blower and slowly increase the flow speed to the maximum. Please make sure that all woolen threads are indicating the air stream above the roof top. Observe the streamlines that occur during this.

Experiment 2

We remove the slightly sloped roof and replace it with the roof construction. Now we add the steep roof.

Again the streamlines are observed.



Conclusion

At the roof with low inclination the threads on the side facing away from the wind are more likely to be attracted. This indicates negative pressure (suction).

At the roof with big inclination the threads on the side facing away from the wind are more likely to be pushed away. Due to strong turbulences and whirls only a low amount of negative pressure occurs (suction).